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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LAM, DANIEL K

ART UNIT	PAPER NUMBER
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2667

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/603,354

Applicant(s)

CHAPMAN ET AL.

Examiner

Daniel K Lam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 17, 19-28, 32-35, 37-47, 51, and 53 is/are rejected.
- 7) ☒ Claim(s) 14-16, 18, 29-31, 36, 48-50 and 52 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1, 19, 32, 33, 37, and 53** remain rejected under 35 U.S.C. 102(b) as being anticipated by Newman et al (U. S. Pat. No. 5,852,601).

Regarding **claims 1, 19, 32, 37, and 53**, Newman et al. discloses an apparatus, a method for preventing collisions between traffic units, and transmission nodes for use in an ATM network, comprising:

- A S/D unit 4-0 that receives a sequence of ATM cells traffic that contains virtual channel identifiers in the cell headers (A first input characterized by a first traffic pattern). See fig. 1 reference 8 and col. 6, lines 40-49.
- Another S/D unit 4-1 that also receives a sequence of ATM cells traffic that contains virtual channel identifiers in the cell headers (A second input characterized by a second traffic pattern). Also see fig. 1 reference 8 and col. 6, lines 40-49.
- A port controller, PC 11-0, contains an input controller, IC 14-0, receives the sequence of ATM cells. Another port controller, PC 11-1, contains an input controller, IC 14-1, receives another sequence of ATM cells traffic (A traffic detection

unit coupled to the first and second inputs for monitoring and receiving the first and second traffic patterns). See figures 4 and 5, and col. 9, lines 25-30.

- *The port controllers, PC 11-0 and PC-1, contains, output controllers, OC 15-0 and OC 5-1 for returning explicit congestion control signals to the sources to control the sources in order to avoid congestion and collision (A notification unit for generating a control signal to either one of the first and second points on a basis of the first and second traffic patterns detected, the control signal being directive to regulate the first and the second source points such that a possibility of collision between the first and the second sources is reduced). See figures 4 and 5, col. 5, lines 19-20, and col. 9, lines 25-30.*

Regarding **claim 33**, in addition to disclose the limitations in claim 32 discussed earlier, Newman et al. further discloses each node includes a forward path and a return path. The return path is used for returning the explicit congestion control signals from one node to another along the path between the source and the node in order to control ATM cells traffic generated by the source such that congestion and collision can be avoided (the control signal generated by a node and sent to source point is updateable by other nodes located along a path established between the node and the source point, for regulating the traffic pattern of the traffic units sent from the source point such that the possibility of collision at the other nodes located along the path is reduced). See fig. 1, col. 5, lines 17-24, and col. 6, lines 29-33.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 2, 20, and 38** remain rejected under 35 U.S.C. 103(a) as being unpatentable over Newman et al (U. S. Pat. No. 5,852,601) in view of Hayashi (U. S. Pat. No. 5,459,719).

Regarding **claims 2, 20, and 38**, Newman et al. discloses limitations in claims 1, 19, and 37 discussed earlier. However, Newman et al. does not disclose the limitation of traffic units are selected from the group consisting of user data units, control units and compound units including a user data part and a control part. Hayashi shows traffic units with frame format consisting of data field (see fig. 2 reference DATA FIELD, and col. 7, lines 1-8), control field (see fig. 2 CONTROL FIELD, and col. 7, lines 1-8) and compound data field with a user data part and a control part (see fig. 4 references Cn, Dn, and Rn, and col. 8, lines 5-9).

Therefore, it would have been obvious to those having ordinary skill in the art, at the time of invention, to format a frame into different parts with different functionalities such that the frame coming from a first and a second inputs can be detected by the input controller, and the source can be notified if collision or congestion occurs, for a key motivation.

Frame having control and data parts will allow control information to be inserted into the frame before being transmitted from one node to another sequentially. Consequently,

each node, in the network, will know the latest conditions of its neighboring nodes. As a result, the network is more reliable and flexible as taught by Hayashi. See col. 2, lines 37-40.

5. **Claims 3-10, 21-25, and 39-44** are rejected under 35 U.S.C. 103(a) as being unpatentable over Newman et al (U. S. Pat. No. 5,852,601) in view of Hayashi (U. S. Pat. No. 5,459,719) and further in view of Peltola et al (U. S. Pat. No. 5,638,359).

Regarding **claims 3, 4, 21, 22, 39 and 40**, Newman et al. and Hayashi disclose limitations in claims 2, 20, and 38 discussed earlier. However, they do not disclose the limitation that the first and second frame patterns including a plurality of timeslots in which user data units are sent, each timeslot being associated with a unique sequence identifier, and each timeslot is associated with a control unit including sequence identifier for the timeslot. Peltola et al. discloses a multi-slotted frame format (see fig. 4 references ADDRESS, INFORMATION, and FRAME CHECK fields) with a unique sequence identifier for each slot (see fig. 4 reference DLCI, and col. 3, lines 63-67).

Therefore, it would have been obvious to those having ordinary skill in the art, at the time of invention, to format each traffic unit coming from the first and second sources, into control and user parts. Furthermore, formats the traffic pattern of the traffic unit into timeslots with unique identifiers for a key motivation. By identifying each timeslot with a unique identifier, virtual connections that belong to different users can be identified and prioritized in order to provide a congestion management method that is reliable and

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capable of rapid responding to changing network resources and user service level requirements as taught by Peltola et al. See abstract section, lines 3-17.

Regarding **claims 5, 23, and 41**, in addition to disclose limitations in claims 4, 22, and 40 discussed earlier, Hayashi et al. further discloses the control field contains destination, DA, and source, SA, addresses (control unit further includes source and destination points for user data units contained in the timeslot). See fig. 2, and col. 7, lines 1-4.

Regarding **claims 6 and 7**, in addition to disclose limitations in claim 5, Newman et al. further discloses that the first input controller, 14-0, and the second input controller, 14-1, detect incoming ATM information cells containing cell headers (the traffic detection unit detects the first frame pattern on a basis of a control unit received from the first source point at the first input, and detects the second frame pattern on a basis of a control unit received from the second source point at the second input). See fig. 4, and col. 8, lines 65 to col. 9, line 2.

Regarding **claims 8, 24, and 42**, in addition to disclose limitations in claims 7, 23, and 41, Newman et al. further discloses the port controller 11-0 contains output controller 15-0 and port controller 11-1 contains output controller 15-1 (the apparatus includes an output communication link for forwarding traffic units received at the first and second inputs to a particular destination point). See figure 4. Furthermore Newman et al. discloses a translator 51 translates each incoming VCI to an outgoing VCI before directing the cell to the outgoing link or to the switch fabric 10 (the apparatus

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transmitting traffic units over the output communication link on a basis of a local frame pattern). See fig. 5, and col. 9, lines 42-47.

Regarding **claims 9, 10, 25, 43, and 44**, in addition to disclose the limitations in claims 8, 24, and 42 discussed earlier, Newman et al. further discloses the limitations that:

- A translator 51 translates each incoming VCI to an outgoing VCI before directing the cell to the outgoing link or to the switch fabric 10 (the traffic detection unit includes a machine readable storage medium holding a data structure and maps each one of the first and second frame patterns to the local frame pattern and store the maps in the data structure). See fig. 5, and col. 9, lines 42-47.
- The translated cell is being transmitted to output controller 15-N. If the queue 54 is full, the reverse marker 49 marks the cell with a reverse signal indication and the cell is looped back (the notification unit is operative to generate the control signal on a basis of the contents of the data structure). See fig. 5, and col. 9, lines 48-57.

6. **Claims 11-13, 26-28, and 45-47** remain rejected under 35 U.S.C. 103(a) as being unpatentable over Newman et al (U. S. Pat. No. 5,852,601) in view of Hayashi (U. S. Pat. No. 5,459,719) further in view of Peltola et al (U. S. Pat. No. 5,638,359), and furthermore in view of Chien et al (U. S. Pat. No. 6,404,753).

Regarding **claims 11, 26, and 45**, Newman et al., Hayashi, and Peltola et al. disclose limitations in claims 10, 25, and 44 discussed earlier. However, they do not disclose the limitations that the control signal generated by the notification unit conveys a

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timeslot allocation vector that provides a status indication for each timeslot of the local frame pattern for the output communication link. Chien et al. discloses a timeslot in the forward channel with a busy/idle indication in each timeslot providing status information regarding whether the base station is able to receive data. See fig. 4 references TA and B/I, and col. 2, lines 11-16.

Therefore, it would have been obvious to those having ordinary skill in the art, at the time of invention, to provide a status indication in each timeslot in the control signal generated by the notification unit on the basis of the contents of the data structure such that the remote transmitter can detect whether the timeslot is free before transmitting its data as taught by Chien. See col. 2, lines 6-10 and lines 15-20.

Regarding **claims 12, 13, 27, 28, 46 and 47**, in addition to disclose the limitations in claims 11, 26, and 45 discussed earlier, Newman et al. further discloses the limitations that the incoming VCI of an ATM cell is being translated into an outgoing VCI in the translator 51 (see figure 5) (mapping between the first frame pattern and the local frame pattern, and between the second frame pattern and the local frame pattern). Chien further discloses using busy/idle bits in timeslots A to H (see figure 4) indicating whether the timeslots A to H are busy or idle (see figure 4) (the timeslot allocation vector is indexed).

7. **Claims 17, 34, 35, and 51** remain rejected under 35 U.S.C. 103(a) as being unpatentable over Newman et al (U. S. Pat. No. 5,852,601) in view of Bisson et al (U. S. Pat. No. 6,349,092).

Newman et al. discloses limitations in claims 1, 33, and 50 discussed earlier.

However he does not disclose the limitations that the apparatus is a switching node in an optical network. Bisson et al. discloses a synchronous optical network comprising 16 switching transmission nodes and four-fiber BLSR capability (fig. 4 reference 10 and col. 6, lines 54-58).

Therefore, it would have been obvious to those having ordinary skill in the art, at the time of invention, to deploy an apparatus having a first input with a first pattern, a second input with a second pattern, a detection unit for detecting the patterns, and a notification unit for controlling the sources, in an optical switching node so that numerous advantages of data transmission through fiber optic, such as high bandwidth capacity and long communication distances without repeaters or regenerators, can be realized as taught by Bisson. See col. 1, lines 39-47.

Allowable Subject Matter

8. **Claims 14-16, 18, 29-31, 36, 48-50 and 52** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Regarding the remark (see page 3, claim 1, paragraph 3) concerning about Newman et al. does not disclose, teach, nor suggest the traffic detection and notification limitations of claim 1. Newman et al. discloses connecting the input sources into the input controllers

that detect incoming ATM cells forming unique traffic patterns. When the port controller detected congestion and possible collision, it instructs its output controller to send congestion signal back to the source. See the *italicized lines* in claim 1.

Furthermore, it is common practice to design “computer networks [with] some sort of mechanism to either prevent collisions altogether or to recover from collisions when they do occur” (search www.webopedia.com for keyword “collision”).

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel K. Lam whose telephone number is (703)

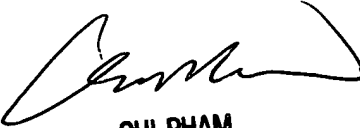
305-8605. The examiner can normally be reached on Monday-Friday from 8:30 AM to 4:30 PM.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (703) 305-4378. The fax phone number for this Group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status Information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DKL *dh*
May 24, 2004


CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600 5/27/04